

(a) To Domestic Licensor:

(i) a royalty of four and one-half percent ($4\frac{1}{2}\%$) of the Selling Price of Weapons and Spare Parts manufactured and Sold by Licensee in the United States Territory or as otherwise permitted by Section 3(a), for military use;

(ii) a royalty at the following percentages of the Selling Price of Weapons and Spare Parts manufactured and Sold by Licensee in the United States Territory or as otherwise permitted by Section 3(a) for Commercial Use during each calendar year:

Five percent (5%) of the first \$200,000 of sales of Weapons and Spare Parts;

Four and one-half percent ($4\frac{1}{2}\%$) of any amount of such sales excess of \$200,000;

(b) Only to Foreign Licensor:

(i) a royalty of four and one-half percent ($4\frac{1}{2}\%$) of the Selling Price of Weapons and Spare Parts manufactured and sold by Licensee as permitted by Section 3(b), for Military Use or Commercial Use.

In the event a sublicense is granted by Colt the agreement subjects Colt under domestic patent rights to a royalty arrangement of not less than 3 percent of the selling price of weapons and spare parts for military use. On commercial sales the royalty payments decrease from a high of 5 percent to a low of 3 percent as sales increase. Any foreign sublicense granted by Colt requires royalty rates of not less than 4 percent of the selling price of weapons and spare parts.

During the period July 1960 through the first quarter 1967, Colt's royalty payments to Fairchild totaled \$2,628,283 based on military and commercial sales of rifles and parts. Of this amount, \$2,339,651 represented payments on military sales.

ACTIONS TAKEN SUBSEQUENT TO SUBCOMMITTEE'S INQUIRY

Marine Corps witnesses testified that subsequent to the subcommittee's visit to Vietnam, the Commanding General, III Marine Amphibious Force, established an orientation team for the M-16 rifle. The team visited every Marine unit explaining the problems experienced and the measures which must be taken to get the most out of the M-16 weapon. In a later submission of information for the record, the Marine Corps reported as follows:

In addition to the visit of the Orientation Team, the following actions have been taken since the subcommittee visit to Vietnam.

a. Commanding General, III Marine Amphibious Force, has formed a contact team of M16A1 experts from the Force Logistic Command. This team has been tasked with the mission of visiting M16A1-using units and training similar teams. The Unit Teams, in turn, will conduct a technical inspection of each M16A1 rifle, provide instruction on care and cleaning, and supervise test firing of each weapon to insure proper weapon functioning. (Copy of message establishing and directing team activities is attached.)

b. Interim instructions were promulgated on 4 August 1967 for the use of lube oil, semi-fluid MIL-L-46000A with the M16A1 rifle in lieu of lube oil general purpose (PL Special) and rifle grease (9150-754-0063). The interim instructions will be used pending receipt of III MAF of Marine Corps Supply instructions. (Copy of interim instruction attached.)

c. Articles have been published in the June 1967, July 1967, and August 1967 "Tactical Trends and Training Tips" regarding care, cleaning, and use of the M16A1. The August 1967 article was printed to provide for removal from the publication and separate retention. (Copies attached.)

d. A Force Bulletin on the M16A1 was promulgated on 16 June 1967. The bulletin contains special instructions for care, cleaning, and correction of common malfunctions of the M16A1. (Copy attached.)

e. Copies of USARV pamphlet 750-5 of 14 December 1966 have been distributed to each Marine armed with the M16A1.

f. Copies of a pocket/wallet sized card with instructions regarding care and cleaning of the M16A1 are being provided for distribution to each Marine armed with the weapon.

On the problem of cleaning equipment, Chairman Ichord asked Brig. Gen. Gordon D. Gayle, Deputy Assistant Chief of Staff, G-3, Headquarters, U.S. Marine Corps, "What, if anything, after the committee visit, was done to assure that every man using the M-16 rifle has the necessary cleaning equipment, particularly a cleaning rod and chamber and bore brushes?"

The reply was that the Marines have instituted "Operation M-16" where cleaning equipment has been airlifted to our forces in Vietnam. Also, it is reported that accelerated procurement of additional quantities of cleaning equipment is underway to cope with the unexpected utilization of equipment being approximately three times the expected rate.

The actions taken by the Army are reported elsewhere in the report. The Deputy Secretary of Defense, the Honorable Paul Nitze, on July 31, 1967, issued a memorandum directing a technical evaluation and field survey of the performance of the M-16 rifle. The purpose of the survey and evaluation was stated to be "to determine whether any major deficiencies exist in the weapon, and, if so, to recommend corrective action."

To conduct the technical evaluation, the Director of Defense Research and Engineering, with the assistance of the Assistant Secretary of Defense (I. & L.) and the Assistant Secretaries for Research and Development of the military departments, was requested to compile and analyze existing data available in continental United States and determine the following:

1. How does the M-16 rifle perform under a variety of circumstances, i.e., environmental, level of training, modes of fire?
2. Considering its mode of employment, what should be the standards of performance and reliability for the M-16 rifle?
3. What have been the causes of malfunction in the M-16 rifle; what has been or is being done to improve the weapon's reliability; and what further can be done?

In addition, the Assistant Secretary of Defense (Administration) was requested to conduct a field survey of the M-16 rifle in South Vietnam. He was instructed to "ascertain the degree to which corrective actions to eliminate causes of M-16 malfunction have been implemented; and general performance and acceptability of the M-16 rifle in the field; and general performance and acceptability of the M-16 rifle under combat conditions."

A final report together with appropriate recommendations was requested to be submitted no later than October 15, 1967.

FINDINGS AND RECOMMENDATIONS

Based on our extensive review the subcommittee's findings and recommendations are as follows:

1. That both Army and Marine Corps personnel have experienced serious and excessive malfunctions with the M-16 rifle, the most serious being the failure to extract the spent cartridge.

2. That proper care and cleaning are of the utmost importance to the effective operation of the rifle.

3. That shortages of cleaning equipment, lack of proper training and instructions contributed to the excessive malfunction rate of the M-16 rifle in Vietnam.

4. That various levels of command in both the Army and the Marine Corps have been negligent in failing to provide proper supervision in the care and cleaning of the rifle, as well as failing to distribute cleaning material and written instructions.

5. That the past experience of the Army with the M-16 rifle in Vietnam was not properly called to the attention of the Marines when the weapon was issued to them in Vietnam.

6. That the major contributor to malfunctions experienced in Vietnam was ammunition loaded with ball propellant.

7. That the change from IMR extruded powder to ball propellant in 1964 for 5.56-mm. ammunition was not justified or supported by test data.

8. That the sole-source position enjoyed by Olin Mathieson on ball propellants for many years and their close relationship with the Army may have influenced the decisionmakers at Army Munitions Command, Army Weapons Command, and the Army Materiel Command. The House Armed Services Committee repeatedly has cautioned the military departments against sole-source procurements. *Therefore, it is recommended that the General Accounting Office conduct an audit and investigation of the contracts awarded to Olin Mathieson for ball propellant loaded in both 5.56-mm. and 7.62-mm. ammunition and the justification for sole-source procurement over the past 26 years.*

9. That a number of modifications to the M-16 rifle were made necessary only after ball propellant was adopted for 5.56-mm. ammunition.

10. That the AR-15/M-16 rifle as initially developed was an excellent and reliable weapon.

11. That certain modifications made to the rifle at the insistence of the Army were unnecessary and were not supported by test data.

12. That two of these modifications increased the unit cost of the rifle substantially and another decreased its performance characteristics. These modifications were the bolt closure device, chrome plating of the barrel chamber, and the change in barrel twist.

13. That corrective action on deficiencies reported and product improvement of the weapon have been unnecessarily delayed.

14. A sole source of production of both the ball propellant and the M-16 rifle have contributed to the delay in product improvement and the corrective action required.

15. That officials in the Department of the Army were aware of the adverse effect of ball propellant on the cyclic rate of the M-16 rifle as early as March 1964, when it was brought to the attention of the Technical Coordinating Committee, yet continued to accept delivery of additional thousands of rifles that were not subjected to acceptance or endurance tests using the ammunition of greatest density in the field and in the supply system (ball-propellant-loaded ammunition). **Up to September 1966, about 99 million rounds of 5.56-mm. ammunition were consumed in Vietnam, of which 89 million rounds were loaded with ball propellant.**

16. That the rifle project manager, the administrative contracting officer, the members of the Technical Coordinating Committee, and

others as high in authority as the Assistant Secretary of Defense for Installations and Logistics knowingly accepted M-16 rifles that would not pass the approved acceptance test. Colt's officials advised the Army that more than half of the rifles would not pass the acceptance test on cyclic rate if they were made to use both ball propellant and IMR extruded propellant in their testing procedure. Colt's was allowed to test using only IMR propellant at a time when the vast majority of ammunition in the field, including Vietnam, was loaded with ball propellant.

17. That the failure on the part of officials with authority in the Army to cause action to be taken to correct the deficiencies of the 5.56-mm. ammunition borders on criminal negligence.

18. That there still is no proof that the modifications proposed will eliminate the malfunctions experienced with the M-16 in Vietnam. *It is recommended that the Department of Defense direct and expedite a thorough and objective test by an independent organization of the weapon system consisting of the modified rifle and the ammunition in Vietnam, as well as both types of propellant currently being loaded in 5.56-mm. ammunition.*

19. That the fouling characteristics of ball propellant will require continued emphasis on proper care and cleaning of the M-16 rifle. Carbon deposit buildup will continue to pose a problem for the extractor, various parts of the bolt mechanism, bolt carrier key, the gas port, and possibly other areas in both the upper and lower receiver.

20. That there is a possible pressure mismatch between tracer and regular ball ammunition that could cause the rifle not to operate properly.

21. That there was a shortage of M-16 rifles for training purposes both in the United States and Vietnam at the time of the approval of the sale of 20,300 rifles to Singapore.

22. That there was a lack of proper coordination between the State and Defense Departments on the sale of the rifles to Singapore.

23. That no instructions regarding tightening of production quality controls were issued by the rifle project manager, Army Materiel Command, or anyone in high authority after continued reports of malfunctions were received from Vietnam.

The Government inspector at Colt's plant took the initiative only after reading newspaper reports of problems being experienced. These newspaper reports were not published until about 6 months after notices of excessive malfunctions were received by the rifle project manager and the Army Materiel Command.

The only inspection tightened as a result of these adverse reports was the one on barrel chambers. This tightened inspection revealed an excessive number failed to meet specifications. *It is difficult for the subcommittee to understand why quality controls were not tightened immediately upon receipt of adverse reports from the troops in Vietnam.*

24. That the bias and prejudices of individuals associated with Army commands or agencies responsible for development and testing of new weapons made it extremely difficult for higher authority to obtain objective information upon which decisions should have been made relative to the rifle program.

25. That the Army system of development, production, and introduction of a new weapon into the inventory should be thoroughly

reviewed to determine if the rifle program is typical of the manner in which the Army operates. The manner in which the Army rifle program has been managed is unbelievable. The existing command structure was either inadequate or inoperative. The division of responsibility makes it almost impossible to pinpoint responsibility when mistakes are made. There is substantial evidence of lack of activity on the part of responsible officials of highest authority even when the problems of the M-16 and its ammunition came to their attention. It appears that under the present system problems are too slowly recognized and reactions to problems are even slower.

The rifle project manager doesn't appear to have control over ammunition. Yet, the weapon system consists of both the rifle and ammunition. It is possible that internal politics and jealousies between the Army Weapons Command and the Army Munitions Command are roadblocks to the successful management of new weapons systems.

26. That it was at least unethical for Major General Lynde to accept employment with the producer of the M-16 rifle upon his retirement from the Army. General Lynde was commanding general of the Army Weapons Command throughout the negotiations for the first Army procurement of the M-16 rifle and in fact approved the terms of the contract negotiated by his subordinates.

27. That minimum effort was expended by the Army and the Department of Defense in attempting to acquire the production rights and technical data package for the purpose of establishing additional sources for production of the M-16 rifle.

Based on Army reports in 1962 and 1963, there was reasonable doubt that the 1963 buy was to be only a "one-time buy" for the Army. The 1966 analysis of the SAWS study and the rifle procurement plan proposed by the Army clearly indicated the need to acquire the rights and data package, yet the Army failed to complete negotiations of a contract until mid-1967. The 1965 procurement contract was amended in June 1966 to increase the quantity by an additional 300,000 rifles. The same amendment provided for negotiations to be completed on the terms for acquiring technical data and production rights not later than December 1, 1966. The negotiations were not completed until over 1 year later, June 30, 1967.

28. That both the Army and Colt's failed to negotiate in good faith in an attempt to comply with the terms of the 1965 production contract; i.e., come to terms on the rights and data package on or before December 1, 1966.

29. That this lack of action delayed the establishment of additional production sources by at least 7 months.

30. That based on information and records made available by the contractor and the Army, it appears that Colt's has enjoyed an excessive profit on M-16 production contracts to date.

Colt's has enjoyed negotiated fixed-price contracts on a 10 percent profit rate basis. Our review revealed profits of 19.6 percent for calendar year 1965; 16.8 percent for calendar year 1966; and 13.4 percent for the first 4 months of 1967. *It is recommended that the General Accounting Office conduct a complete audit of Colt's military contracts to determine actual profit rates experienced, the adequacy of their accounting system and whether provisions of Public Law 87-653 were circumvented.*

31. *It is recommended that proper action be taken by the Secretary of Defense and the Secretary of the Army to insure that the design, contracting, procurement, manufacture, development, supply, and testing of future weapons not suffer the same fate.*

The subcommittee recommends that the Secretary of Defense and the Secretary of the Army make adequate studies to determine if the abolishment by the Secretary of Defense of the Office of the Chief of Ordnance (which was accomplished along with the abolishment of the position of other chiefs of various Army services in 1962) could have been partly responsible for the failure of proper control and supervision in the matter of the M-16.

RICHARD H. ICHORD, Chairman.

SPEEDY O. LONG.

WILLIAM G. BRAY.

I have read the foregoing report and find myself in full accord with the views and recommendations of the subcommittee.

L. MENDEL RIVERS, Chairman.